

## 777 Demolition Case Studies

### The Peel Centre, Hendon

Client: Redrow Homes

Sector: Commercial/ Residential

Location: Hendon, London

Value: £2.9m

Completed: April 2017

### Scope of Works

- Site office and welfare setup
- Design and installation of a 2.4m high hoarding with vehicle and pedestrian gates
- Site Security
- Establish site compound, welfare set up and fire alarm system
- Identification isolation and protection of existing services above and below ground
- CAT Scan
- Enabling soft strip
- Asbestos management and removal
- Soft strip of buildings
- Demolition of 22 story buildings constructed using Large Panel Systems
- Hitachi 1200 Excavator using NFDC approved Step-Down Method
- All HSE notifications
- Liaison with LUL and Network Rail
- Establish noise and vibration levels and monitoring equipment

### Methodology

The tower block was demolished using a super long reach excavator fitted with a hydraulic cruncher attachment; the boom of this machine was fitted with water spray jets, 777 also used additional water suppression attached to a MEWP which was operated remotely at ground level. The structure was demolished down on a floor-by-floor basis. The machine operator was in constant radio contact with the Site Manager and Banksman.

All materials fell to the ground into a marked exclusion zone. The long reach operator cleared the floors of debris to avoid any overloading. Work ceased to allow further 360 excavators fitted with bucket attachments to clear the area of debris.

The demolition was stepped at each floor level so as not to create a totally vertical face, this maintained the stability of the buildings. The long reach machine reached a point where the buildings were then low enough to be taken down to ground level using 360 excavators fitted with appropriate attachments.

### Demolition Mat

777 introduced a purpose made demolition mat reducing the amount of dust, noise and gave further security and safety against falling debris to the machine operatives and the general public (seen in the picture above).

Constructed of 12mm thick rubber, 7m wide and 28m in length. The mat was held down using concrete blocks attached to the bottom and a mobile crane was used to lift the mat into position.

## 50-57 Newman Street

Client: Fitztrovia Property Ventures

Sector: Commercial

Location: Newman Street, London

Value: £700,000

Completed: June 2020

### Scope of Works

- Erect hoarding and Heras fencing
- Erect protective mono-flex scaffold to external elevations
- Implemented Traffic Management Plan
- Install temporary propping to party walls
- Separation of the building from the party walls using wall saws
- Survey, design and erect temporary back propping to slabs
- Internal Soft Strip of the building
- Demolish structures down to ground level using Top-Down Method
- Erect weatherproofing to exposed party walls
- Break out ground slab – temporary basement propping
- Break out basement slab and foundations
- Cleared demolition materials from site
- Grade and leave site clean.

### Methodology

A mobile crane lifted two, five-ton excavators with hydraulic breaker attachments to roof level where rooftop plant and structures were demolished. Through an opening in the roof the two excavators and a Cat skid steer loader were lifted down to the fifth floor (via the crane) where the roof slab, columns and walls were demolished. Through an opening on the fifth floor the machines were lifted down to the fourth floor where the process was repeated, this sequence was continued until ground slab level. A 360 excavator broke out the ground slab and materials fell into the basement where it was cleared. Basement slab and foundations were broken out.

### Tight Restrictions

Due to the tight restrictions of the site 777 implemented a Top-Down method of demolition. Full height mono-flex protective scaffolding was erected to facilitate hand demolition whilst protecting the live neighboring buildings and general public.

### Well Hole

As debris accumulated on each floor the Cat skid steer loader removed the materials down the lift shaft to prevent overloading the slabs. A 360 excavator at the bottom crushed the materials and directly loaded into waste skips

### Temporary Propping

777 worked with structural engineers to design and install temporary propping to the party walls, slabs and basement. The steel raking shores were rigorously load tested and inspected ensuring the structural integrity of the building throughout the contract.

## Bronte & Fielding House

Client: United House

Sector: Residential

Location: South Kilburn, London

Value: £1.1m

Completed: August 2014

### Scope of Works

- Set up Site Offices & Welfare
- Erection of Site Hoarding
- Structural & Asbestos Surveys
- Enabling Soft Strip for Asbestos Removal
- Licenced Asbestos Removal Works
- Internal strip out of the buildings
- Protection of three live substations
- Demolition of underground car park
- Demolition of two 18 story LPS constructed buildings
- 1200 Hitachi Long Reach using Step Down Method
- Slab and foundations broken out
- Crushing of Materials on site

### Methodology

Prior to commencing demolition, 777 conducted structural and asbestos surveys. The surveys revealed licensed asbestos, 777 completed an enabling soft strip as part of the removal strategy, through both buildings licensed asbestos was removed safely and disposed at a licensed recycling facility.

Soft strip of the buildings removed all internal fixtures and fittings, materials were segregated into correct recycling skips.

777 deployed a Long Reach Excavator to implement a Step-Down method of demolition. Maintaining the structural integrity of the buildings was paramount until low enough for 360 Excavators to demolish the remaining. Dust was suppressed using platform mounted water cannons and debris was cleared from the exclusion zones using Cat skid steer loaders when safe to do so. The slab, underground car park and foundations were broken up using 360 excavators with hydraulic pulveriser attachments.

Concrete arisings from the buildings, slabs, foundations and car park were crushed onsite and stockpiled for the contractor to use during the construction phase.

### Overcoming Challenges

- 'Just in time' delivery method implemented due to confined site with limited access from a busy main road
- Three live electricity sub stations located at the base of each block remained live and protected throughout demolition
- Close liaison with stakeholders including nearby residents and businesses throughout the project, ensuring they were informed of the works and able to communicate concerns and complaints freely
- Completed under a strict 24-week timeframe and within budget, ready for the construction phase.

## 185 Park Street

Client: Sons & Co Ltd

Sector: Commercial

Location: Southwark, London

Value: £2.2m

Completed: April 2019

### Scope of Works

- Works as a Principal Contractor
- Installation of Site Hoardings, Gates and protective scaffolding
- Production of DEMP, Demolition Phase Plan, TMP & Site Paperwork
- Protection of UKPN Sub-Station
- Sensitive approach to the Project (Adjacent to Tate Modern Gallery)
- Environmental Monitoring
- Licensed Asbestos Removals
- Demolition Office & Commercial Buildings
- Different demolition methodologies used on different buildings
- Removal of Contaminated Ground
- On-Site Crushing & Recycling
- Reduced Dig & Installation of Piling Mat (7200m3)
- Management of Client Sub Contractors.

### Methodology

Structural and asbestos surveys were conducted in the early stages. Required temporary back propping was installed where required, protective scaffolding encompassed 60% of the site. Enabling soft strip of the buildings aided the removal of asbestos. Extensive soft strip removed all internal items. External cladding was removed by hand breakers and dropped into exclusion zones.

### Remote Demolition

These excavators were used on buildings no greater than four stories. Remote excavators controlled by trained CPCS operatives and reduced these buildings down to ground floor slab level.

### Top-Down Demolition

A mobile crane on site lifted an 8t 360 excavator and skid steer loader to the roof level, structures on this level were demolished and then machines lifted to the floor below. The roof slab was demolished followed by the walls and columns. Debris was cleared from the slab below regularly. Lift shafts were used to remove waste from the works level, at the bottom of the chute a skid steer, loaded waste into lorries. This sequence continued to ground slab level.

### High Reach Demolition

The high reach fitted with rotating pulveriser attachment commenced demolition at the highest central point. Arisings fell within the marked exclusion zones below. Slabs below were cleared safely and regularly to prevent overloading. The machine worked a floor-by-floor sequence until reaching the final floor line. The remaining was demolished using 360 excavators. Throughout this process scaffolders removed scaffolding as the demolition progressed.

### Variation Works

Ground slab and foundations were broken up as per the contract. The client requested a 2m reduced dig and the installation of a 7200m<sup>3</sup> piling mat for the subsequent contractor. 777 completed these works and the project finished on time and within budget.

